

Work Order ID 133404

133404

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Monday, June 08, 2015 4:00:29 PM

Item ID: D2939-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Saddle LH In, 206
 Start Date: 6/08/15 Start Qty: 2.00 *2* Cust Item ID:
 Required Date: 6/08/15 Req'd Qty: 2.00 *2* Customer:
 Reference:

Approvals: Process Plan: MES Date: JUN 09 2015 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2939	Rev C								
100	HAAS CNC VERTICAL MACHINING #1	0.01				2	1		DAS 40 9-89 15/08/13
100									
HAAS 1	Memo	0.02							
HAAS CNC vertical machine #1	Program part number and batch number.1-Inspect part number and batch number are programmed correctly.2-Machine Step No 1 of Folio and visually inspect as per dwg D2939 & attached Dimension Sheet 3-Machine Step No 2 of Folio and visually inspect as per								
110	CONVENTIONAL MILLING MACHINE	0.00				2			DAS 40 9-89 15/08/17
110									
Mill Conv	Memo	0.00							
Conventional Milling Machine	Machine Keyway and inspect per attached dimension sheet								
120	QC1- Inspection performed by CMM	0.00				2			DAS 14 9-89 15/08/19
120									
QC	Memo	0.00							
Quality Control									

P.T.O.

DQA:

Date:

15/08/24

WORK ORDER NON-CONFORMANCE / UPDATE

DART
AEROSPACE

QA Closed:

Date:

15/08/24

Work Order update only

Work Order: <u>133404</u>		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. <u>02939-1</u>		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
NCR No. <u>15-5267</u>		Scrap ☒		Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐			
Date: <u>15/08/17</u>		Step #: <u>100</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval			
						DAS 9 15-08-13			
Description Work Order Deviation				Disposition					
Inside Bore shape is OVAL (Foot Ball shape) on one saddle HASS 2 is producing Machining deviation at High Feed Rate.				Corrective Action: Saddle will no longer be machined on Haas #2. A individual work station with has been open for every Haas station. Route has been change to Haas #3 Work Station. Replaced # Batch B132708 SCRAPED				Completed By DAS 40 15/08/17 9-89 Lead hand / Supervisor Approval Verification DAS 9 15-08-13 9-89 QC / QA Coordinator Approval DAS 9 15-08-12 9-89	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☒	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	☒ Fit/Function	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Unidentified ☐	Past Due ☐	OTHER :							

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Start Date: 6/08/15 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 6/08/15 Req'd Qty: 2.00 ***2*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00				2	1		<i>AFB</i>
130									
QC	Memo	0.00							15708/19
Quality Control									
140	Chemical Conversion Coat per QSI005 4.1	0.00				2			15-8-20 DC
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00				2	6	15821	DS 34 988
150									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: <i>9:30</i> FINISH TIME: <i>10:10</i> OVEN TEMPERATURE: <i>10:10</i>								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

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Monday, June 08, 2015 4:00:29 PM

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Standards
160	QC3- Inspect Part Finish	0.00							38 9-89
160						(2)			
QC	Memo	0.00							
Quality Control									AUG 2 1 2015
170	Identify as per dwg & Stock Location. st 395	0.00							
170									
Packaging	Memo	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.00							
Quality Control									

AUG 2 4 2015

AUG 2 4 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			

Root Cause		FAULT CATEGORY			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐
Design	☐	Operator	☐	Temperature/Cure	☐
Doc/Data	☐	Offset/Setup	☐	Set-up	☐
Equip/Tooling	☐	Supplier	☐	BOM/Route	☐
Handling/Pre	☐	Training	☐	Broken/Damage/Defect	☐
Material	☐	Use for Testing	☐	Inspection Incomplete/Unqualified	☐
Internal Transport	☐	Poor Information	☐	Contamination	☐
Tribal Knowledge	☐	Rushing	☐	Crushing	☐
LOA	☐	Product Improvement	☐	Heat Treat	☐
Substation	☐	Process Improvement	☐	Wave/Twist in Tube	☐
Past Expiry Date	☐	Manufacturing Process	☐	Marks/Chatter	☐
Misidentified	☐	Past Due	☐	OTHER :	☐

Picklist Print

Monday, June 08, 2015 4:00:29 PM

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Work Order ID: 133404

133404

Parent Item: D2939-1

D2939-1

Parent Item Name: Saddle LH In, 206

Start Date: 6/08/15

Required Date: 6/08/15

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP: B00.06.26New DWG rev (mpp 2069)EC
IPP Rev:C As per Rev C 07-03-19 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-001		Manufactured	No			100	Each	19.0000	1	2			
D6101-001									**			15/08/13	DAS 40 9-59
Saddle Billet													

Location

Loc Qty

Loc Code

MAT042

16

→ 129986

16

2

MAT045

3

125829

3

→ 132708

1

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

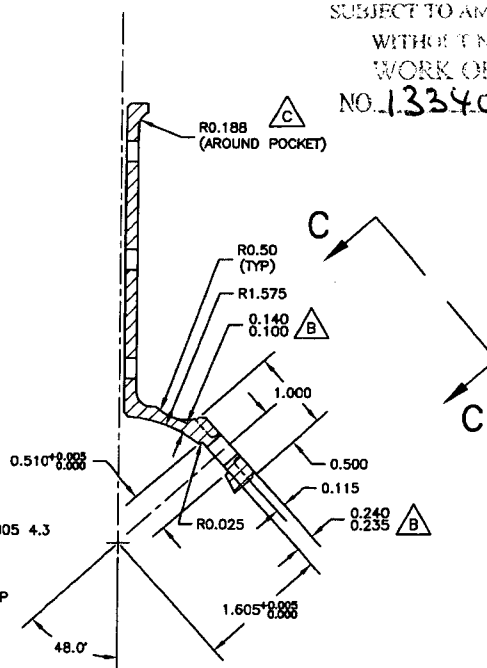
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

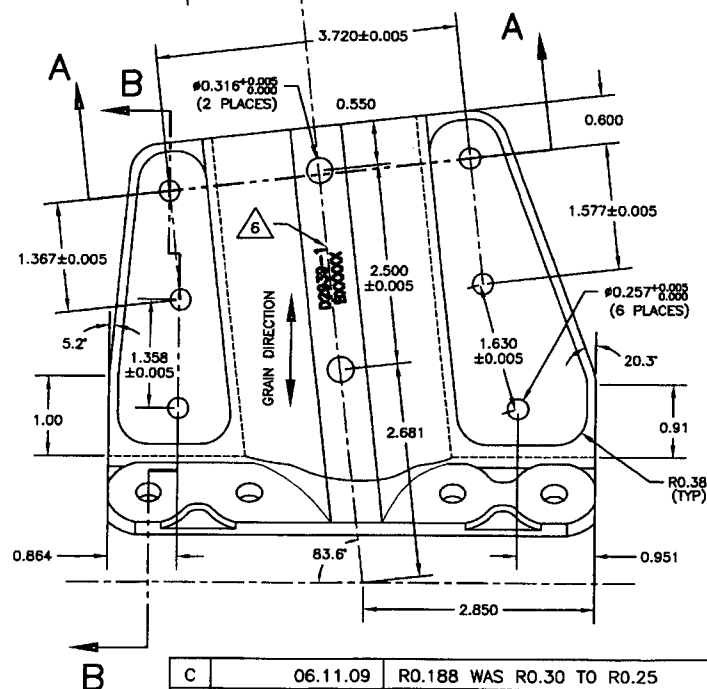
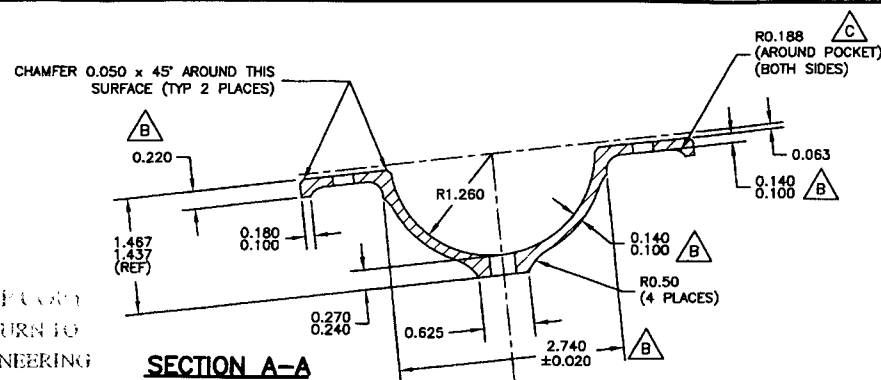


NOTES: 0.5107

- 1) MATERIAL: ALUMINUM 7075-T7351 (QQ-A-250/12)
(MAKE FROM D6101-001 SADDLE BILLET, 7075)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
- 3) BREAK ALL SHARP EDGES 0.010 TO 0.020
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE INCHES
- 6) ENGRAVE PART AND BATCH NUMBER IN THIS AREA 0.010 TO 0.015 DEEP



SECTION B-B



C	06.11.09	R0.188 WAS R0.30 TO R0.25
B	00.05.29	CHANGED DEOMETRY AND MATERIAL
A	99.11.12	NEW ISSUE
DESIGN	DRAWN BY 4 CB	 DART AEROSPACE USA, INC. BELLINGHAM, WA
CHECKED PH	APPROVED 	DRAWING NO. D2939
DATE 06.11.09		TITLE SADDLE INSIDE
		REV. 1 OF 2 SHEET 1 OF 2

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THAT IT IS NOT TO BE USED FOR ANY PURPOSE
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DART AEROSPACE USA, INC.

DART AEROSPACE LTD	Work Order: 133404
Description: 206 Saddle, Inboard, Left side	Part Number: D2939-1
Inspection Dwg: D2939 Rev. C	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2939 Rev. C and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
A	0.100	0.140		.103	.121	.117			
B	0.100	0.140		.100	.121	.117			
C	0.100	0.140		.102	.124	.124			
D	0.210	0.230		.226	.225	.225			
E	1.245	1.255		1.250	1.250	1.250			
F	1.245	1.255		1.250	1.250	1.250			
G	2.495	2.505		2.500	2.500	2.500			
H	0.510	0.515		.512	.512	.512			
I	1.572	1.582		1.577	1.577	1.577			
J	2.495	2.505		2.500	2.500	2.500			
K	0.257	0.262		.258	.258	.258			
L	0.312	0.317		.314	.314	.314			
M	0.235	0.240		.238	.236	.237			
N	0.100	0.140		.124	.125	.124			
O	0.540	0.560		.548	.549	.549			
P	0.490	0.510		.501	.501	.500			
Q	3.715	3.725		3.720	3.720	3.720			
R	2.720	2.760		2.740	2.740	2.740			
S	0.240	0.270		.253	.254	.254			
T	0.100	0.180		.140	.140	.140			
U	1.625	1.635		1.630	1.630	1.630			
V	1.362	1.372		1.367	1.367	1.367			
W	0.316	0.321		.316	.316	.316			
X	1.250	1.270		1.2625	1.2630	1.262			
Y	1.565	1.585	DT8695 A/B	1.5764	1.5733	1.5743			
Z	0.178	0.198		.188	.188	.188			
AA									
AB									
AC									
AD									
AE									
AF									
AG									
AH									
Accept/Reject DAS									

Measured by: 40	Audited by: DT [Signature]
Date: 15/08/13	Date: 15/08/19

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.12.12	Reformat; Added Dim. X-Y, DT8683, DT8686, DT8690 & DT8695 A/B	KJ/RF	
C	07.03.21	Revised per drawing revision C	KJ/JLM [Signature]	[Signature]



Part Number: D2939-1	Rev: C	- Page 1 -
Description: SADDLE INSIDE	Inspection Dwg: D2939	Work Order: B133404

Item Ref.	Nominal	Tolerance	No. Piece_1 Actual	No. Piece_2 Actual			
1	0.312	+0.005/0.000	0.313	0.312			
2	0.500	+0.010/-0.010	0.499	0.500			
3	1.250	+0.005/-0.005	1.250	1.250			
4	2.500	+0.005/-0.005	2.501	2.499			
5	1.250	+0.005/-0.005	1.249	1.250			
6	6.000	+0.010/-0.010	6.000	6.000			
D7	0.050	+0.010/-0.010	0.040	0.040			
D8	0.050	+0.010/-0.010	0.045	0.045			
9	1.452	+0.015/-0.015	1.457	1.457			
10	0.220	+0.010/-0.010	0.229	0.229			
D11	0.140	+0.040/-0.040	0.140	0.140			
D12	0.120	+0.020/-0.020	0.127	0.128			
13	1.260	+0.010/-0.010	1.257	1.257			
14	0.063	+0.010/-0.010	0.057	0.056			
15	0.120	+0.020/-0.020	0.125	0.129			
D16	0.120	+0.020/-0.020	0.127	0.125			
D17	2.740	+0.020/-0.020	2.742	2.741			
D18	0.625	+0.010/-0.010	0.635	0.635			
D19	0.255	+0.015/-0.015	0.255	0.255			
20	0.316	+0.005/0.000	0.316	0.316			
21	3.720	+0.005/-0.005	3.718	3.717			
22	0.550	+0.010/-0.010	0.551	0.552			
23	0.600	+0.010/-0.010	0.599	0.600			
24	1.577	+0.005/-0.005	1.578	1.578			
25	0.257	+0.005/0.000	0.258	0.258			
26	2.500	+0.005/-0.005	2.499	2.498			
27	1.630	+0.005/-0.005	1.629	1.629			
28	20.300	+0.500/-0.500	20.220	20.226			
29	0.951	+0.010/-0.010	0.955	0.953			
30	2.850	+0.010/-0.010	2.852	2.852			
31	2.681	+0.010/-0.010	2.681	2.681			

Measured by:
Mathieu Lamarche

Date:
2015-8-19

Audited by:

Date:

DT Samir
15/08/19



Part Number: D2939-1	Rev: C	- Page 2 -
Description: SADDLE INSIDE	Inspection Dwg: D2939	Work Order: B133404

Item Ref.	Nominal	Tolerance	No. Piece_1 Actual	No. Piece_2 Actual			
32	83.600	+0.500/-0.500	83.565	83.570			
33	0.864	+0.010/-0.010	0.861	0.863			
34	1.358	+0.005/-0.005	1.359	1.359			
35	5.200	+0.500/-0.500	5.219	5.223			
36	1.367	+0.005/-0.005	1.367	1.367			
D37	0.188	+0.010/-0.010	0.188	0.188			
13	1.575	+0.010/-0.010	1.574	1.574			
D39	0.120	+0.020/-0.020	0.122	0.123			
D40	1.000	+0.010/-0.010	1.003	1.003			
41	0.500	+0.010/-0.010	0.501	0.500			
42	0.115	+0.010/-0.010	0.114	0.111			
D43	0.235	+0.005/0.000	0.238	0.239			
44	1.605	+0.005/0.000	1.608	1.608			
Ang45	48.000	+0.500/-0.500	48.046	48.019			
D46	0.510	+0.005/0.000	0.512	0.512			

Measured by:
Mathieu Lamarche

Date:
2015-8-19

Audited by:

Date:

AF Lamm
15/08/19